I CLAIM:

1. A procedure for data transmission between a processing unit and a plurality of position measuring instruments, which are connected to one another in a linear bus topology, the procedure comprising:

generating a position data request signal from said processing unit; and

synchronously executing said position data request signal in said plurality of position measuring instruments.

2. The procedure of claim 1, wherein transmission in said linear bus topology by said plurality of position measuring instruments to said processing unit is effected by a bucket-chain principle.

3. A procedure for data transmission between a processing unit and a plurality of position measuring instruments, which are connected to one another in a linear bus topology, the procedure comprising:

generating a position data request signal from said processing unit; and

synchronously executing said position data request signal in said plurality of position measuring instruments, wherein said synchronously executing comprises:

taking into account a specific delay correction value for each position measuring instrument, so that from a time said position data request signal is generated by said processing unit until said synchronously executing said position data request signal in said position measuring instruments, an identical delay time

results in each of said position measuring instruments.

4. The procedure of claim 3, wherein each of said specific delay correction values is selected as a function of a signal transit time between said processing unit and an applicable one of said plurality of position measuring instruments.

5. The procedure of claim 4, wherein each of said specific delay correction values of each of said plurality of position measuring instruments is ascertained in an initialization phase prior to a measurement mode of said plurality of position measuring instruments.

6. The procedure of claim 5, wherein each of said respective ascertained delay correction values is stored in a corresponding memory, which is assigned to respective ones of said plurality of position measuring instruments.

7. The procedure of claim 4, wherein each of said respective delay correction values is determined as a function of all said ascertained signal transit times, in such a way that for all said plurality of position measuring instruments, synchronous execution of said position data request signal in said plurality of position measuring instruments is possible.

8. The procedure of claim 3, wherein said delay time is composed additively of a length of time for transmitting a defined, minimum number of digital data words and an associated length of time of an associated one of said delay

correction values.

9. The procedure of claim 3, wherein transmission in said linear bus topology by said plurality of position measuring instruments to said processing unit is effected by a bucket-chain principle.

10. The procedure of claim 3, wherein immediately after said simultaneous execution of said position data request signal in said plurality of position measuring instruments, ascertained position data are transmitted in a direction of said processing unit.

11. The procedure of claim 9, wherein during said transmission of position data, buffer storage of said position data is effected in buffer memories of said plurality of position measuring instruments.

12. A device for data transmission, comprising:

a processing unit;

a plurality of position measuring instruments, which are connected to one another in a linear bus topology, wherein, for synchronous execution of a position data request signal sent by said processing unit, said plurality of position measuring instruments each include correction devices that take into account specific delay correction values, so that from a time said position data request signal is generated by said processing unit until synchronous execution of said position data request signal in all said plurality of position measuring instruments, an identical delay time results for

each of said plurality of position measuring instruments.

13. The device of claim 12, wherein each of said correction devices comprises a corresponding memory, in which corresponding ones of said specific delay correction value are stored.

14. The device of claim 12, wherein each of said plurality of position measuring instruments comprises a buffer memory, in which, during the transmission of position data to said processing unit, which is done by a bucket-chain principle, buffer storage of said position data is effected.

15. The device of claim 12, wherein each of said plurality of position measuring instruments comprises an actuatable switch element, by way of which signal transmission by respective ones of said plurality of position measuring instruments can be interrupted.